

AMENDMENTS TO THE CLAIMS

Claims 1-20 (Canceled).

Claim 21 (Currently Amended): A method for producing an osteoclast precursor cell, which comprises:

obtaining cells in a cellular fraction containing granulocytes and lymphocytes from joint fluid by centrifugation, and
subsequently culturing a hematopoietic stem cell-derived cell obtained from peripheral blood or joint fluid the cells in an essential medium for mammalian cells, optionally with added serum, in the absence of any additional cytokine(s) for at least 1 to 3 weeks to obtain an osteoclast precursor cell.

Claim 22 (Previously Pending): The method of Claim 21, wherein said essential medium for mammalian cells contains serum.

Claims 23-24 (Canceled).

Claim 25 (Currently Amended): The method of Claim 21, wherein said hematopoietic stem cell-derived cell is the cells are cultured at a temperature ranging from 35 - 37°C in 5 - 7% CO₂-containing air for 1-3 weeks.

Claim 26 (Withdrawn): An osteoclast precursor cell, which is obtainable by the method of Claim 21.

Claim 27 (Withdrawn): A method for producing an osteoclast, comprising:
culturing an osteoclast precursor cell in a culture medium in the absence of accessory
cells.

Claim 28 (Withdrawn): The method of Claim 27, wherein said culture medium
comprises one or more compound(s) selected from the group consisting of IL-3, IL-7, GM-
CSF, eotaxin, eotaxin-2, and eotaxin-3.

Claim 29 (Withdrawn): The method of Claim 28, wherein said culture medium
comprises IL-3.

Claim 30 (Withdrawn): The method of Claim 28, wherein said culture medium
comprises IL-7.

Claim 31 (Withdrawn): The method of Claim 28, wherein said culture medium
comprises GM-CSF.

Claim 32 (Withdrawn): The method of Claim 28, wherein said culture medium
comprises eotaxin.

Claim 33 (Withdrawn): The method of Claim 28, wherein said culture medium
comprises eotaxin 2.

Claim 34 (Withdrawn): The method of Claim 28, wherein said culture medium comprises eotaxin-3.

Claim 35 (Withdrawn): The method of Claim 28, wherein said culture medium comprises a culture supernatant of nitrogen-stimulated peripheral blood mononuclear cells.

Claim 36 (Withdrawn): The method of Claim 28, wherein said culture supernatant comprises a supernatant of phytohemagglutinin-stimulated human peripheral blood mononuclear cells.

Claim 37 (Withdrawn): An osteoclast, which is obtainable by the method of Claim 27.

Claim 38 (Withdrawn): A method for screening an agent for treating or preventing a metabolic bone disease, which comprises:

contacting an osteoclast precursor cell isolated by the method of Claim 21, with an agent to be tested, and

measuring the inhibitory activity of said agent on differentiation of the osteoclast precursor into an osteoclast.

Claim 39 (Withdrawn): A method for screening an agent for treating or preventing a metabolic bone disease, which comprises using the osteoclast precursor cell of Claim 21.

Claim 40 (Withdrawn): A method for screening an agent for the treatment or prevention of a metabolic bone disease, which comprises:

contacting the osteoclast of Claim 37 with an agent to be tested and measuring inhibitory activity of said agent on the bone resorption activity of said osteoclast.

Claim 41 (Withdrawn): An agent for treating or preventing a metabolic bone disease which is obtainable by the method of Claim 40.

Claim 42 (New): A method for producing an osteoclast precursor cell, which comprises:

obtaining peripheral blood mononuclear cells from peripheral blood by centrifugation,
culturing the cells in an essential medium for mammalian cells, optionally with added serum, in the absence of any additional cytokine(s) for 1-2 hours,
rinsing out non-adherent cells, and
culturing the obtained cells in an essential medium for mammalian cells, optionally with added serum, in the absence of any additional cytokine(s).

Claim 43 (New): The method of Claim 42, wherein said essential medium for mammalian cells contains serum.

Claim 44 (New): The method of Claim 21, wherein the cells are cultured at a temperature ranging from 35 - 37°C in 5 - 7% CO₂-containing air for 1-3 weeks.

SUPPORT FOR THE AMENDMENTS

Claims 23-24 have been canceled.

Claims 21 and 25 have been amended.

Claims 42-44 have been added.

The amendment of Claims 21 and 25 is supported by the corresponding claims as previously filed, originally filed Claims 5-7, the specification at pages 3-4 and Example 1 (page 12). New Claims 42-44 are supported by originally filed Claims 5-7 and 21, the Abstract, and the specification as originally filed, for example at page 3, lines 18-23, page 6, lines 5-12, page 6, line 23 to page 7, line 11, and Example 2(1) (see pages 17-18).

No new matter has been added by the present amendment.